

APPLICANT(S): SHAHAR, Arie et al.
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AMENDMENTS TO THE CLAIMS

Please cancel claims 4-9 and 15 without prejudice. Please add claim 21. The following listing of claims is intended to replace all prior versions and listings of claims in the application:

LISTING OF CLAIMS

1. **(Currently Amended)** An all optical chopping device for shaping and reshaping comprising:
an optical splitter having an input terminal and first and second output terminals;
and
an all optical AND logic gate having a first and second inputs ~~for receiving a first optical signal associated with said first and second output terminals, respectively, a second input for receiving a second optical signal~~ and at least one output, wherein one of said first and second inputs includes an optical delay line,
wherein said splitter is arranged to receive an optical input signal from said input terminal and to split the optical input signal into first and second optical signal components to exit at said first and second output terminals, respectively,
wherein said AND logic gate is arranged to receive said first and second optical signal components via said first and second inputs, and to produce at said at least one output an optical output signal corresponding to a portion of the AND product of said first optical signal component and said second optical signals signal component, and
~~wherein~~ said optical output signal is being narrower than ~~at least one of said first optical input signal and said second optical signal.~~

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2. **(Currently Amended)** The device of claim 1 wherein said first optical signal component and said second optical signal component are delayed relative to each other.
3. **(Currently Amended)** The device of claim 2 ~~where-in~~ wherein said delay is shorter than one of said first optical signal component and said second optical signal component.
4. – 9. **(Cancelled)**
10. **(Currently Amended)** The device of claim 1 wherein ~~said one of said first and second inputs of said optical AND gate and said second input~~ one of said first and second inputs of said optical AND gate includes an optical amplifier.
11. **(Original)** The device of claim 1 wherein said device further includes a closed loop phase control.
12. **(Original)** The device of claim 1 wherein said device further includes a closed loop synchronization control.
13. **(Currently Amended)** The device of claim 1 wherein said optical output signal is produced by head chopping of ~~one of said first optical signal and said second optical~~ one of said first and second optical input signal.
14. **(Currently Amended)** The device of claim 1 wherein said optical output signal is produced by tail chopping of ~~one of said first optical signal and said second optical~~ one of said first and second optical input signal.
15. **(Cancelled)**
16. **(Currently Amended)** The device of claim 1 wherein said first optical signal component and said second optical signal component are coherent.

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17. **(Currently Amended)** The device of claim 1 wherein said AND logic gate includes a summing gate selected from a group of summing gates containing beam splitters, dielectric beam splitters, metallic beam splitters, dual gratings, interleaved arrays of waveguides, and dense dual gratings.
18. **(Original)** The device of claim 1 wherein said AND logic gate includes a threshold device.
19. **(Currently Amended)** The device of claim 1 wherein said AND logic gate includes an optical loop.
20. **(Original)** The device of claim 1 wherein said AND logic gate includes a non linear optical loop.
21. **(New)** The device of claim 1 wherein said optical delay line is a variable optical delay line.